



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/563,072

08/23/2006

Markus Christoph

2639A/103

3659

2101 7590 03/16/2010  
Sunstein Kann Murphy & Timbers LLP  
125 SUMMER STREET  
BOSTON, MA 02110-1618

EXAMINER

PAUL, DISLER

ART UNIT

PAPER NUMBER

2614

MAIL DATE

DELIVERY MODE

03/16/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/563,072	CHRISTOPH, MARKUS	
	<b>Examiner</b>	<b>Art Unit</b>	
	DISLER PAUL	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1;4-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1;4-22 is/are allowed.
- 6) ☒ Claim(s) 23;25-29 is/are rejected.
- 7) ☒ Claim(s) 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Allowable Subject Matter***

Claims 1-22 are allowed.

The following is an examiner's statement of reasons for allowance: independent claim 1 is allowed for the same reason as argued by the applicant on the argument remark notes as filed on 11/16/09.

### ***Response to Arguments***

Applicant's arguments in regard to independent claim 23 have been fully considered but they are not persuasive and is rejected over new prior art.

### ***Allowable Subject Matter***

Claim 24 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application

Art Unit: 2614

by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 23; 27-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Marash et al. (US 6,594,367 B1).

Re claim 23, Marash et al. disclose of a system for use in a vehicle comprising: a microphone array with at least two microphones and a superdirective beamformer having a fixed superdirective filters (fig.1 (10,16, 20); fig.2 (26,30,36); col.5 line 1-10; col.7 line 20-30/array of microphones for designing fixed filters); and where the superdirective beamformers are configured with a predetermined susceptibility that is based on a relative error of the microphone array (eq (5; 7-11) & (5,14-15); col.5 line 25-40; col.8 line 1-15 based on the distances variation of the microphone array or the Null matrix of the microphone array (error) ; thus one may determined the predetermined susceptibility (as in the already known formula) of the gain coefficient or filter coefficient).

Re claim 27, the system according to claim 23 where at least one microphone comprises a directional microphone (col.2 line 1-10 & col. 11 line 55-60).

Re claim 28, the system according to claim 27, with the directional microphone, comprises a directional microphone with a cardioid characteristic (col.11 line 55-60).

Art Unit: 2614

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marash et al. (US 6,594,367 B1).

Re claim 29, the system according to claim 27, wherein having the directional microphone. But, Marash et al. fail to disclose of the microphone comprises a differential microphone. However, official notice is having a microphone comprises a differential microphone is commonly known in the art, thus, it would have been obvious to have modified the combination with incorporating the microphone comprises a differential microphone in enhancing the specific directional sound signal.

Claims 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marash et al. (US 6,594,367 B1) and further in view of Brennan et al. (US 2003/0063759).

Art Unit: 2614

Re claim 25, the system according to claim 23 with the at least two microphones array, However, Marash et al. fail to disclose of the where the microphone array comprises at least two microphones arranged in an end-fire orientation with respect to a first position. But, Brenman et al. disclose of a system wherein the configuration of the microphone array comprises at least two microphones arranged in an endfire orientation with respect to a first position (fig.3; [0006, 0009]); end-fire orientation with plurality of position in enhancing microphone signal relatives to signal in other direction. Thus, it would have been obvious for one of the ordinary skill in the art at the time of the invention to have modified the combination with incorporating the microphone array comprises at least two microphones arranged in an end-fire orientation with respect to a first position in enhancing microphone signal relatives to signal in other direction.

Re claim 26, the system according to claim 25, where at least two microphones in the microphone array are arranged in end-fire orientation with respect to a second position (fig.3a; plurality of microphones in end-fire orientation and plurality of positions).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DISLER PAUL whose telephone number is (571)270-1187. The examiner can normally be reached on 9-5.

Art Unit: 2614

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. P./  
Examiner, Art Unit 2614

/Xu Mei/  
Primary Examiner, Art Unit 2614